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## On a Case of Foreign Body in the Pericardiac Cavity

by

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A 24-year-old male office-worker living in a rural district, who had also worked as a farmer from time to time was admitted to our clinic with chief complaint of obscured dull aching and discomfort in the anterior chest region as well as in the epigastrium. Family history revealed nothing contributory. At the age of ten the patient was diagnosed to have adhesive pleurisy from which, however, he was told to be recovered. He was seen by a local physician at the age of sixteen because of repeated episodes of cough with sputa stained by blood streaks, and was then treated medically under the diagnosis of pulmonary distomatosis. No history of trauma in the chest region was recorded. The patient and his family denied any episode of broken needles stuck and lost in his body in the past.

A few years prior to the present admission, he noticed discomfort and dull aching in the anterior thoracic region and (or radiating to) the upper abdominal area for the first time. Epigastric and thoracic discomfort had been gradually exacerbated thereafter in spite of repeated medical treatments and, in addition, he developed occasional episodes of palpitation upon exertion. Because of epigastralgia radiographic examination of GI series was performed at a local hospital, which was essentially negative for pathological changes, but an abnormal lesion was found incidentally in the cardiac shadow at that time. The patient was therefore referred to our clinic for further examination and surgical procedures if indicated.

### PHYSICAL EXAMINATION

Physical examination on admission showed a well developed and well nourished oriental male in no acute distress. Radial pulse was 60-80 per minute with normal tension, but a slight degree of irregular rhythm was noted. Blood pressure on admission was 130/72. Bulbar and palpebral conjunctiva was neither icteric nor anemic. The pupils were round, regular, equal and reacted well and promptly to light and accommodation. The heart and lungs were essentially negative for pathology upon percussion as well as on auscultation. Abdominal organs seemed to be grossly normal and no abnormally palpable masses were proved. The extremities were also grossly normal and peripheral arterial

pulsations were within normal ranges.

### LABORATORY FINDINGS

Urine and feces were negative. No parasitic eggs were found upon microscopic examination of feces. Hematological examination including complete blood count and hemogram was essentially normal with RBC (red blood cell) count of 5.47 million, WBC (white blood cell) count 5,000, Hematocrit 42%, and hemoglobin 91% by SAHLI's method. Bleeding and coagulation times were 1'30'' and 11' respectively. Liver function tests were reported to be within normal ranges with icterus index of 6. Electrocardiogram revealed sinus bradycardia and sinus arrhythmia of mild degree.

#### Biochemical Laboratory Findings

(1) Electrolyte in Serum			
Na	140.2	mEq/L	
K	4.07	〃	
Ca	4.94	〃	
Cl	107.2	〃	
(2) Total Protein in Serum		7.3g/dl	
(3) Total Cholesterol in Serum		130mg/dl	
(4) CRP	(-)		
(5) ASLO	125	Todd Unit	
(6) RAT	(-)		
(7) Alkali Phosphatase	4.0	K. A. Unit	
(8) Acid Phosphatase	2.0	K. A. Unit	
(9) S-GOT	18.0		
(10) S-GPT	10.0		

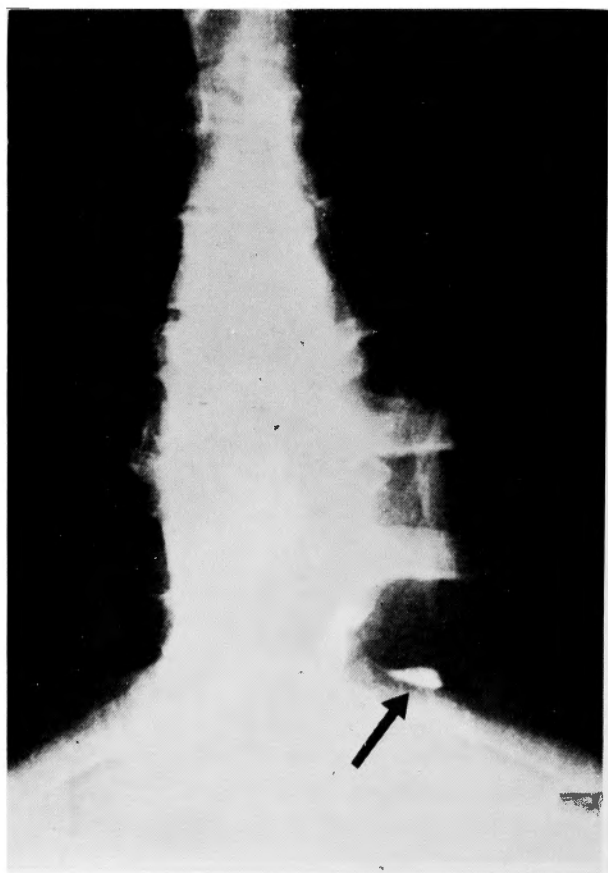
As shown in Figures 1 and 2, chest X-ray picture taken at standing position showed no dilatation (or enlargement) of the heart but an abnormal shadow, a human small finger tip in size, was demonstrated at the apex of the heart, which moved vertically towards slightly right upper direction synchronizing with cardiac rhythm. When the patient was placed on his back, the intracardial shadow was deviated towards right upper direction as shown in Figures 3 and 4. When the patient was laid on his right side with his head down, it was observed to move near-by the ascending aorta and pulmonary artery. The shadow, however, moved back to the apex as the patient was raised up to standing position. Judging from the above-described radiographic characteristics of the shadow together with his past history and clinical pictures, preoperative diagnosis of intrapericardial foreign body was established.

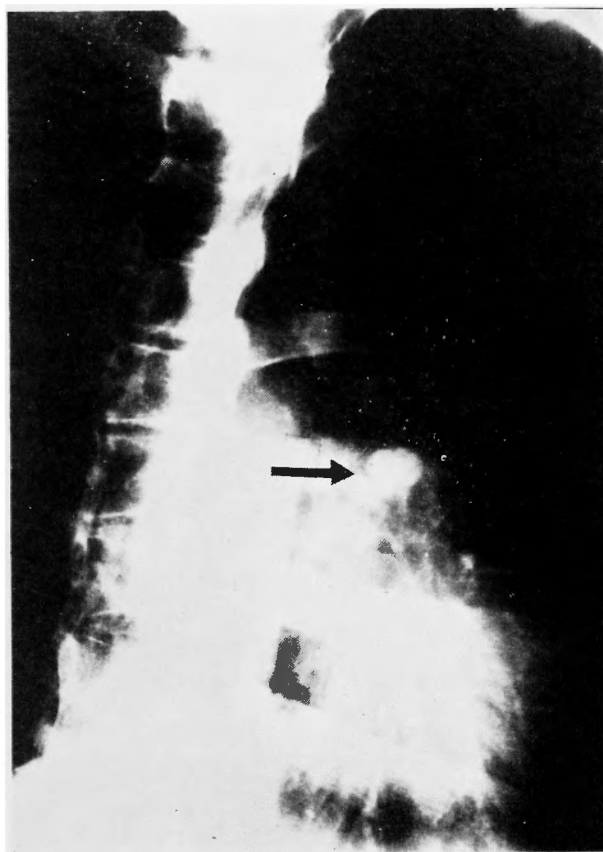
### OPERATIVE FINDINGS

Exploratory thoracotomy with removal of the pericardial foreign body was performed on Aug. 10, 1963. Under the endotracheal general anesthesia, the patient was placed in the modified semi-right-side position and the left thoracic cavity was explored through the antero-lateral 4th intercostal space incision. Generalized pleural adhesions of mild degree



Fig. 1

**Fig. 2**



**Fig. 3**

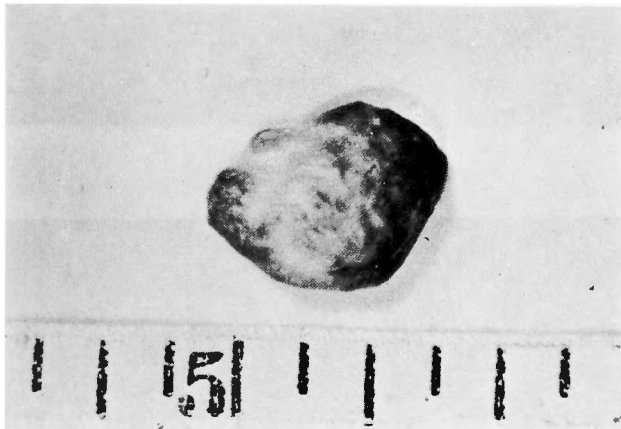


Fig. 4

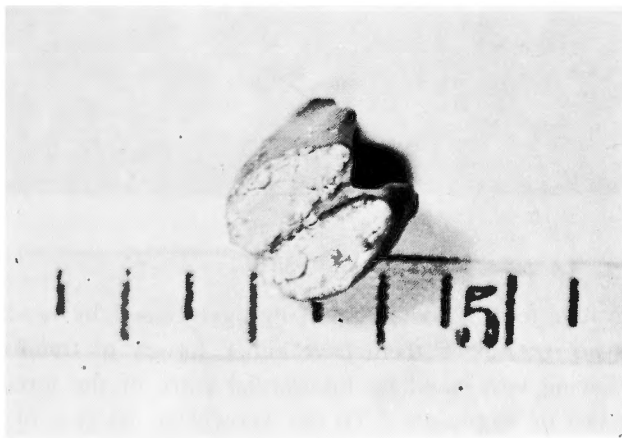
were exfoliated manually without difficulty. Pericardium looked grossly normal without any evidence of thickening or discoloration. Upon opening the pericardium, approximately 20 c.c. of yellowish mucoid foamy fluid escaped, (which seemed more yellow in color and more mucous in viscosity than usual pericardial fluid). Manual exploration revealed a freely movable mass of human index finger tip size at the deepest part of the pericardiac cavity, that was namely the position of IVC inflow into the right atrium. The mass was successfully removed with ease. Pericardium was then closed roughly and the surgical procedure was terminated by routine closure of the chest wall. The patient withstood the entire procedure well and his postoperative recovery was satisfactory.

#### **PATHOLOGICAL FINDINGS**

As shown in Fig. 5, the specimen consisted of an irregularly shaped mass of  $2 \times 2$  cm in size, weighing 3 grams as a whole, and it was yellowish white in color. The surface of the removed mass was somehow irregular, but was lustrous. The cut-surface as shown in Fig. 6, was rather uniform and (yellowish white) cheesy mass composed the major part of the content, being well encapsulated by a layer of thin membrane. With



**Fig. 5**



**Fig. 6**



a drip of acid solution, the cheesy mass was found to be melted away with vesicatory. Microscopic examination of the specimen (Figs. 7 and 8) revealed cell infiltration of mild degree with a necrotic area in the centre. The cell infiltration was not so extensive as usually seen in cases of inflammatory changes, but was rather of reactive nature, probably caused by parasites or their eggs. No distoma or other parasites, however, was proved by serial examination of the specimen.

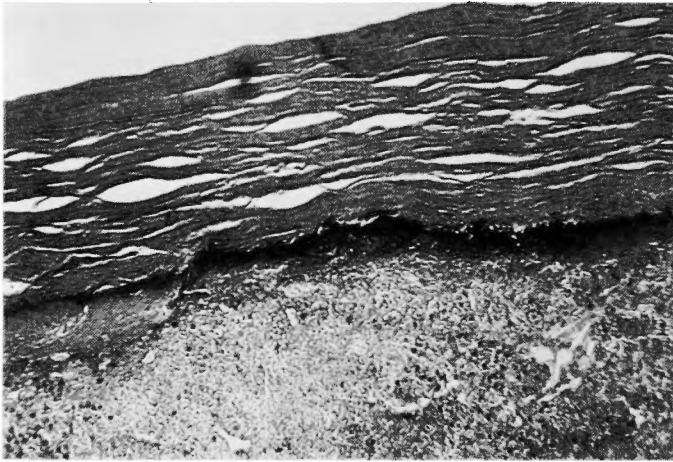


Fig. 7

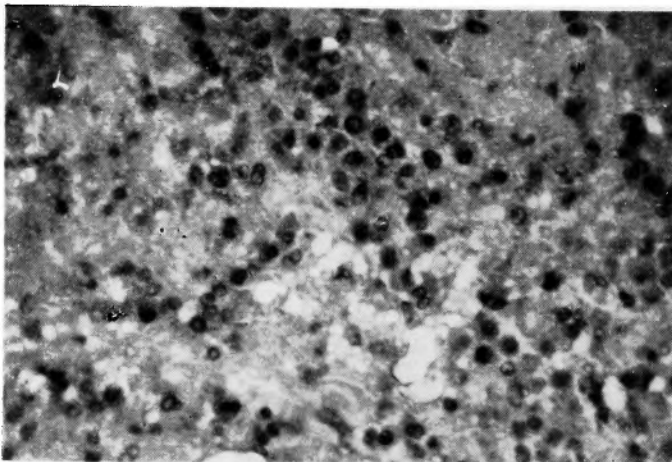


Fig. 8

#### DISCUSSION

Cases of intracardial foreign bodies, especially those caused by needle, have been often reported here in Japan, but all of them have either history of trauma or in a few cases history of mis-swallowing terminated by intracardial entry of the foreign bodies, penetrating through the trachea or esophagus. To our knowledge, no case of foreign body entry into the pericardiac cavity without any contributory history of trauma or mis-swallowing

has ever been reported. In our case, the only contributory past history of the patient was pulmonary distomatosis, and in addition, he came from the rural district where most of the dwellers had been suffered from distomatosis. Though no parasite was proved in the serial sections of the specimen (microscopically), the foreign body removed from the pericardiac cavity might well be determined as of parasitic origin from the history and histology of the specimen as well.

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